

LISTING OF CLAIMS:

1. (previously presented) An electric device for detecting the presence of a signal of a certain frequency in a line connection (301), comprising:

at least three energy-storing components (302, 303, 304, 305, 501, 502, 503, 504) connected in parallel to said line connection,

- switching means (306) between said energy-storing components and a certain reference for making a connection selectively from each energy-storing component to said reference,

- coupled to said switching means, means (CLK1, CLK2) for controlling said switched means at a predetermined frequency, and

- coupled to said energy-storing components, means (307, 308, 309) for measuring a certain quantity comparable to the energy stored from each energy-storing component.

2. (previously presented) A device according to Claim 1, wherein said switching means (306) are arranged to make a connection from each energy-storing component to the reference once during the cycle time of said signal to be detected.

3. (previously presented) A device according to Claim 2, wherein,

said energy-storing components are capacitances (302, 303, 304, 305),

said means (307, 308, 309) for measuring the quantity comparable to the energy stored comprise means (307, 308) for measuring the voltage difference between capacitances, and

said reference is a certain standard potential.

4. (previously presented) A device according to Claim 3, comprising four capacitances (302, 303, 304, 305) as energy-storing components, wherein the means for measuring the voltage difference between capacitances are arranged to measure the voltage difference between the first (302) and third (304) capacitance and between the second (303) and fourth (305) capacitance, the order of the capacitances being the order in which the switching means are arranged to make a connection from each capacitance to the standard potential.

5. (previously presented) A device according to Claim 2, wherein,

said energy-storing components are inductances (501, 502, 503, 504),

said means (307, 308, 309) for measuring the quantity comparable to the energy stored comprise means (307, 308) for measuring the current difference between inductances, and

said reference is a certain standard current (505).

6. (previously presented) A device according to Claim 1, further comprising:

filtering means (506, 507, 508, 509) for filtering said quantity comparable to the energy stored before the measurement of the quantity.

7. (previously presented) A method for detecting the presence of a signal of a certain frequency in a line connection, comprising steps in which

the signal is led parallelly to at least three energy-storing components connected in parallel (602),

each energy-storing component is regularly connected to a certain reference (603), and

the value of a certain quantity comparable to the energy stored is measured from each energy-storing component (604, 605).

8. (previously presented) A method according to Claim 7, wherein each energy-storing component is connected to the reference once during the cycle time of the signal to be detected.

9. (previously presented) A method according to Claim 8, wherein an even number of energy-storing components are

connected to the reference in turns during the cycle time of the signal to be detected in the order from one N , where N is an even number, and in the measurement of the value of the quantity comparable to the energy stored the values related to the first and the $(N/2 + 1)^{\text{th}}$ component are compared, and similarly the values related to the second and the $(N/2 + 2)^{\text{th}}$ component and so forth up to the i^{th} and $(N/2 + i)^{\text{th}}$ component are compared, until $(N/2 + i) = N$.

10. (previously presented) A method according to Claim 7, wherein the value of said quantity comparable to the energy stored is also filtered before it is measured.

11. (previously presented) An electric device for detecting the presence of a signal, comprising:

a line connection,

at least three energy-storing inductances connected in parallel to said line connection,

a reference in the form of a standard current,

switching means (306) for making a connection selectively from each said energy-storing inductances to said reference,

a controller (CLK1, CLK2) coupled to said switching means and configured for controlling said switching means at a predetermined frequency, and

measuring means (307, 308, 309) for measuring a certain quantity comparable to the energy stored from each energy-storing inductances, wherein,

said switching means (306) are arranged to make a connection from each energy-storing inductance to the reference once during the cycle time of said signal to be detected, and

said measuring means measures a current difference between the inductances.